

## Agilent CrossLab Start Up Services

# Agilent Cary 630 FTIR Site Preparation Checklist

Thank you for purchasing an instrument from **Agilent Technologies**. CrossLab Start Up is focused on helping customers shorten the time it takes to start realizing the full value of their instrument investment.

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an **information guide and checklist** prepared for you that outlines the supplies, space, and utility requirements for the system set up in your lab.

# Introduction

## Customer Information

- If you have questions or problems in providing anything described as part of *Customer Responsibilities* below, please contact your local Agilent or partner support / service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.
- Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-schedule any services that have been purchased.
- Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system but should be contracted separately.
- Please refer to the other peripheral products (ie, samplers etc.) for site preparation requirements.

## Customer Responsibilities

Ensure that your site meets the following specifications before the installation date. For details, see specific sections within this checklist, including:

- The necessary laboratory or bench space is available.
- The required **environmental conditions for the lab** as well as laboratory gases, tubing.
- The **power requirements** related to the product (e.g. **number & location** of electrical outlets).
- The **required operating supplies** necessary for the product and installation.
- While Agilent is delivering **Installation and Introduction** services, users of the instrument should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.
- Please consult the **Special Requirements and Other Considerations** section below for other product-specific information

## Important Customer Web Links

- To access Agilent training and education, visit <http://www.agilent.com/chem/training> to learn about training options, which include online, classroom and onsite delivery. A training specialist can work directly with you to help determine your best options.
- To access the **Agilent Resource Center** web page, visit <https://www.agilent.com/en-us/agilentresources>. The following information topics are available:
  - Sample Prep and Containment
  - Chemical Standards
  - Analysis
  - Service and Support
  - Application Workflows
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>
- Videos about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube** channel at <https://www.youtube.com/user/agilent>
- **Need to place a service call?** [Flexible Repair Options | Agilent](#)

## Site Preparation

### Dimensions and Weight

Identify the laboratory bench space before your system arrives based on the table below. Pay special attention to the total height and total weight requirements for all system components you have ordered and avoid bench space with overhanging shelves. Also pay special attention to the total weight of the modules you have ordered to ensure your laboratory bench can support this weight.

### Special notes

- The weight and the dimensions of the system allow it to be placed on almost any desk or laboratory bench but remember to provide enough space for the laptop or computer, monitor and printer and any additional accessories that have also been purchased.
- Ensure that the workbench is free from vibration. Any equipment generating vibration during operation must be placed on the floor rather than alongside the FTIR Cary 630 instrument on the workbench.
- Do not subject the instrument to any shocks.
- The power cord and communication connection for the FTIR 630 instrument is located at the rear and the power switch at the top left corner.

The following table provides dimensions and weight requirements.

Instrument Description	Weight		Height		Depth		Width	
	Kg	lbs.	cm	in	cm	in	cm	in
Cary 630 FTIR Instrument (Engine)	2.9	6.3	13	5.1	22	8.7	16	6.3
Cary 630 Transmission Module	1.9	4.3	13	5.1	14	5.5	18	7.1
Cary 630 Tumbler Module	1.4	3.0	19	7.5	9.2	3.6	8.9	3.5
Cary 630 DialPath Module	1.4	3.1	19	7.5	9.2	3.6	8.9	3.5
Cary 630 Diffuse Ref Module	0.5	1.2	10	3.9	5.8	2.3	8.9	3.5
Cary 630 Diamond ATR Module	0.9	2.0	24	9.4	8.9	3.5	9.2	3.6
Cary 630 Ge ATR Module	0.9	2.0	24	9.4	8.9	3.5	9.2	3.6
Cary 630 ZnSe ATR Module	0.9	2.0	24	9.4	8.9	3.5	9.2	3.6
Cary 630 10 Degree SR Module	0.9	2.0	24	9.4	8.9	3.5	9.2	3.6
Cary 630 5B ZnSe ATR Module	0.9	2.0	24	9.4	8.9	3.5	9.2	3.6

## Environmental Conditions

Operating your instrument within the recommended temperature and humidity ranges ensures optimum instrument performance and lifetime.

### Special notes

- Performance can be affected by sources of heat & cold, e.g. direct sunlight, heating/cooling from air conditioning outlets, drafts and/or vibrations.
- The bench or supporting surface must be vibration free.
- The instrument must be kept away from hot surfaces and any sources of electromagnetic interference.
- The site's ambient temperature conditions must be stable for optimum performance.
- For optimum analytical performance, it is recommended that the ambient temperature of the laboratory be between 20 and 25 °C and be held stable within  $\pm 2$  °C throughout the entire working day.
- The Cary 630 FTIR instrument is designed for operation in clean air conditions. The laboratory must be free of all contaminants that could have a degrading effect on the instrument's components.
- For optimum performance the area should have a dust-free, low humidity atmosphere. A layer of dust on the electronic components and heat sinks could act as an insulating blanket and reduce heat transfer to the surrounding air.
- Any spills must be cleaned up immediately.
- After receiving the Agilent Cary 630 FTIR delivery, do not immediately open the shipping container. Instead, place the shipment in a room-temperature environment and allow 24-48 hours for the contents of the container to reach room ambient temperature. This is to avoid unnecessary condensation on the components prior to the initial setup and installation process.
- After stabilizing, unbox the Cary 630 engine and power on (to green LED status).
- Keep the engine in this state until the scheduled installation.
- Agilent offers the Cary 630 FTIR with two types of optics; ZnSe for high humidity conditions, and KBr, for extended spectral range and low humidity conditions. Please ensure you have the correct product for your requirements.
- Although the Cary 630 FTIR with KBr optics has an anti-moisture coating, the optical windows should not come into direct contact with any liquid forms of moisture. In addition, storage and laboratory humidity must be controlled, particularly for KBr systems.

- For the operation of the Cary 630 FTIR spectrometer under nitrogen atmosphere the same specifications apply as for the operation under air atmosphere.
- Argon gas has different physical properties compared to air that need to be considered for the safe operation of the Cary 630 FTIR spectrometer:
  - The thermal conductivity of argon is lower than the thermal conductivity of air
  - The dielectric strength of argon is lower than the dielectric strength of air
- The operation of the Cary 630 FTIR spectrometer is specified under air atmosphere up to an altitude of 2000m. Consequently, the Cary 630 FTIR spectrometer can be operated under argon atmosphere if the pressure is around 1 atm and the power supply is operated outside of the argon atmosphere.

**Note: Repair/replacement of moisture-damaged optics, due to inadequate site conditions, is not covered under warranty.**

The following table give the temperature and humidity range for the different conditions and options of the instrument.

Instrument Description	Temperature Range °C (F)		Humidity Range %	
	ZnSe	KBr	ZnSe	KBr
Cary 630 FTIR Instrument and accessories OPERATIONAL (powered)	5 to 45°C (41 to 113 F)	20 to 26°C (68 to 79F)	Up to 80% non-condensing	20% to 50% non-condensing
Cary 630 FTIR Instrument and accessories STORAGE / NOT POWERED	5 to 45°C (41 to 113F)	5 to 45°C (41 to 113F)	Up to 40% non-condensing	Up to 40% non-condensing
Cary 630 FTIR Instrument and accessories IN TRANSIT	-30 to 60°C (-22 to 140F)	5 to 45°C (41 to 113F)	Up to 80% non-condensing	20% to 50% non-condensing

## Power Consumption

### Special notes

- If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
- A separate power outlet receptacle should be provided for the FTIR Cary 630 instrument.
- Always operate your instrument from a power outlet which has a ground connection. Make certain that power outlets are earth-grounded at the grounding pin.
- Good electrical grounding is essential to avoid potentially serious shock hazards and for the instrument to perform within its specifications.
- All power supplies for the FTIR Cary 630 instrument must be single-phase, AC voltage, 3-wire system (active, neutral, earth) and should be terminated at an appropriate power outlet receptacle that is within reach of the power cord.
- Universal Power supply and a country dependent power cord are supplied with the FTIR Cary 630 instrument.
- The use of extension cords or outlet adaptors is not recommended.
- Do not position the equipment so that it is difficult to operate the power switch.
- Avoid using power supplies from a source that may be subject to electrical or RF interference from other services (large electric motors, elevators, and welders, for example).
- Power cords are provided based on the user's country requirements. Only the supplied power cord is to be used with this equipment. The installation of electrical power supplies must comply with the rules and/or regulations imposed by local authorities responsible for the supply of electrical energy to the workplace.
- If necessary, replace the power cord only with a cord equivalent to the one specified.

**Note: Once installed, it is recommended that your Cary 630 be constantly powered. This ensures that the unit maintains optimal internal temperature and humidity. Humidity-related component damage is not covered under warranty.**

Instrument Description	Line Voltage and Frequency V, Hz	Maximum Power Consumption VA	Maximum Power Consumption W
Cary 630 FTIR Instrument	100-240V @ 50-60Hz	240 VA	60W

- Use the correct power cord regarding your region.

### Power cables for Instrument and PC

Part Number	Description
8120-0674	Power cord - Thailand and Philippines
8120-1369	Power Cord, Australia/NZ, C13, 10 amp
8120-1378	Cable Assembly-Power Cord 18AWG 2.3m-LG
8120-2104	Cable-Assembly-Power cord 250VAC 10A 3-C
8120-3997	Power Cord, DK/Greenland, C13, 10 amp
8120-4211	Power Cord, India/S Africa, C13, 10 amp
8120-4753	Power Cord, Japan, C13, 125V
8120-5182	Power Cord, Israel, C13, 10 amp
8120-6869	Power Cord, Argentina, C13 250V 10A RA/3
8120-6978	Power Cord, Chile, C13, 10 amp
8120-8705	Power Cord, GB/HK/SG/MY, C13, 10 amp
8121-0723	Cable-Assembly Power-Cord 3-Conductor 25
8121-1226	Power Cord, Europe+S Korea C13, 10A, 250V
8121-1635	Power cord - Taiwan
8121-1638	Power cord - Cambodia
8121-1809	Power Cord, Brazil, C13, 250V Max



## Required Operating Supplies by Customer for Installation

### Special notes

- For information on Agilent consumables, accessories, and laboratory operating supplies, please visit: [FTIR Spectrometry, Fourier Transform Infrared Spectroscopy | Agilent](#).
- The below items are included with the appropriate accessory but may also be obtained using the following part numbers from Agilent Technologies.

Item Description (including Dimensions etc.)	Vendor's Part Number (if applicable)	Recommended Quantity
Polystyrene film for Transmission module/ 1-Bounce ATR accessories	G8043-67405	1 (one), for System Check tests Ships with accessory Includes ATR conformal material and instructions, G8043-90018
Polystyrene film for TumbIR / Dialpath	G8043-67406	1 (one), for System Check tests Ships with accessory
Desiccant with purge fitting One routine replacement included in PM service. Refer to User's Guide (G8043-90001) for replacement instructions Desiccant requires changing once the humidity level on indicator reaches 30%.	G8043-67401	<b>Recommended to keep several spares on hand</b> <b>Check instrument humidity indicator regularly</b> More frequent replacement required in <ul style="list-style-type: none"> <li>humid environments</li> <li>KBr systems</li> </ul>
Cary 630 Engine Purge Kit with instructions	G8043-67012	1 (one) kit, ships with KBr engine Available to purchase separately
IR source with purge fitting	G8043-67505	Replace when required. Part replacement not included in PM service.
Pike standard, 38µm-thick NIST Traceable Polystyrene Card Certified Polystyrene Film for Qualification services only. May be supplied by Agilent personnel during Qualification service by prior arrangement.	PIKE-162-5450	1 (one), for Qualification services only.
ICL standard, 35µm-thick NIST Traceable Polystyrene Card Certified Polystyrene Film for Qualification services only. May be supplied by Agilent personnel during Qualification service by prior arrangement.	925-0128	1 (one), for Qualification services only.

## Special Requirements and Other Considerations

### Nitrogen Purge

You must purge the optics space after reassembly if the instrument has been opened for desiccant replacement, IR source replacement or Preventative Maintenance, for example. All Cary 630 engines come fitted with a purge valve for this purpose. All KBr engines ship with a Purge tubing kit and instructions. Purging displaces carbon dioxide, water vapor, other atmospheric gases and ensures optimal humidity conditions for operation. This step is particularly important for KBr systems. If purge gas is not available at your site, the instrument may need to be returned to Agilent for service.

**Please note that a continuous purge (for example purging the engine during data collection) should NOT be used.**

#### Purge Gas Specifications:

The optical compartment is small, so a flow rate in the order of **0.5 to 1.0 L/minute, for approximately 2 hours**, is sufficient. Higher flow rates may damage the purge valve on the Cary 630 engine.

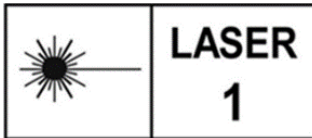
**Note:** The purge kit includes a factory preset flowmeter. DO NOT adjust this setting. The purge Gas inlet pressure must be set between 50 psi and 70 psi (between approximately 3.5 to 5.0 Bar) for the purge kit flowmeter to correctly regulate flow as per specification. Liquid nitrogen (in conjunction with a heat exchanger) is recommended because this is generally less costly than compressed nitrogen and is superior quality. A bottled gas source is sufficient, due to the small volumes required. Where compressed nitrogen must be used, the gas must be **dry, oil-free and uncontaminated, with a purity value of 99.996% or better.**

**Caution:** Do not use compressed nitrogen from a supplier that uses oil or water in the compression process. These methods leave fine particles of oil or water suspended in the nitrogen that may be deposited on the instrument optics. Only use nitrogen from a supplier that fills containers from immersion pumps that are lubricated with liquid nitrogen.

**Note:** If purge gas is not available at your site, the instrument must be returned to Agilent for services such as routine parts replacement, repair and Preventative Maintenance.

## Other Hazards

- Your Agilent Cary 630 FTIR has been designed to comply with the requirements of the Electromagnetic Compatibility (EMC) Directive and the Low Voltage (electrical safety) Directive (commonly referred to as the LVD) of the European Union. Agilent has confirmed that each product complies with the relevant Directives by testing a prototype against the prescribed EN (European Norm) standards.
- Laser Hazard: Class 1 LASER product



WARNING: Laser Hazard

- The Cary 630 FTIR system contains a low-powered solid-state laser required for operation. The laser emits radiation and can cause injury to the eye. Do not stare directly into the beam.
- Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007 CDRH Accession No. 0321242 IEC 60825-1:2014.
- Use of the Cary 630 system and accessories may involve materials, solvents and solutions that are flammable, corrosive, toxic or otherwise hazardous. Careless, improper, or unskilled use of such materials, solvents and solutions can create explosion hazards, fire hazards, toxicity and other hazards which can result in death, serious personal injury, and damage to equipment and property.
- ALWAYS ensure that laboratory safety practices governing the use, handling and disposal of such materials are strictly observed. These safety practices should include the wearing of appropriate safety clothing and safety glasses.
- Unpacking the instrument is your responsibility. As the packages are opened, ensure you received everything you ordered. If there are any discrepancies, notify the supplier. If any items are found to be damaged, immediately notify the carrier and supplier. Any differences from the original order should be referred immediately to your Agilent sales office.

## Service Engineer Review (Optional)

### Service Engineer Comments

If the Service Engineer completed a review of the Site Preparation requirements with the customer, the Service Engineer should complete the following Comments section.

If there are any specific points that should be noted as part of performing the service review or other items of interest for the customer, please write in this box.

## Site Preparation Verification

Service Request Number:

Date of Review:

Service Engineer Name:

Customer Name:

Service Engineer Signature:

Total number of pages in this document: